



**J Taylor**

Ecology Consulting

# **Land at Lowfield Rd Reading Berkshire**

## **Extended Phase 1 Habitat Survey**

An ecological appraisal of the nature conservation value of the site and ecological constraints associated with the proposed residential development off Lowfield Road in Reading.

### **Report for**

Reading Borough Council

c/o Mr. Andrew Steeden

York Associates

The Studio

4 Test Road

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### **Project reference**

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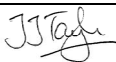
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## 1.0. Summary

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J Taylor Ecology Consulting were commissioned to undertake an Extended Phase 1 Habitat Survey in relation to the proposed new residential development at Lowfield Road in Reading.

A detailed scoping survey of the site and surrounding area was undertaken on 18<sup>th</sup> February 2016. An assessment was then made of the potential for the site to support protected species listed on Schedules 1 and 5 of the Wildlife and Countryside Act 1981 (as amended) and any Biodiversity Action Plan Priority Species or Habitats. As part of the field survey, a detailed Preliminary Bat Appraisal (Collins J. 2016) was also undertaken, consisting of a visual inspection of the buildings and trees on or adjacent to the site. A comprehensive desk study was also undertaken. The following conclusions were identified.

- No statutory or non-statutory sites will be affected by the construction of the proposed residential development.
- No rare or notable habitats are present on site and no habitats are considered to be Habitats of Principal Biological Importance on Section 41 of the NERC Act 2006 or are listed in the Berkshire Biodiversity Action Plan.
- None of the flora species recorded are specifically protected by the Wildlife and Countryside Act 1981 (as amended) or are listed as Priority Species on the UK National Biodiversity Action Plan (JNCC 2012).
- A small number of self-seeded scattered broadleaved trees were present close to the boundary fence of the site. A mature goat willow (T5) located close to the southern corner of the site was considered to have an ecological value at the Local level. It is recommended that this tree is retained and integrated into the landscaping proposals for the site.
- Although currently the site is considered largely unsuitable for reptiles, there is the potential for the suitability to increase, should the vegetation continue to grow and the site remain unused and derelict. The site should be maintained in its currently cleared state as long as possible, to avoid the potential for reptiles to move into the main construction area from the adjacent areas of suitable habitat.
- The trees on the boundary of the site contained habitat suitable for bird nesting to occur. Therefore, there is a risk of both direct and indirect impact or disturbance to individual nesting birds. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Therefore, the work should commence outside the bird-nesting season (mid March to August inclusive). If this is not possible, the trees should be checked for wild nesting birds, their eggs, nests or young before work is permitted to commence.
- Although no habitat of value to bats will be directly affected by the proposals, there is the potential for a significant increase in disturbance and lighting which has the potential to impact on the wider population status both during construction and use. Mitigation is proposed.
- There is the risk of encountering stag beetles should work take place during early summer (May to July). Precautionary mitigation is proposed.

Recommended ecological enhancements are also provided aimed at meeting Sections 109 and 118 of the National Planning Policy Framework (NPPF) 2012, which seeks to incorporate measures to further the conservation of protected species and biodiversity in general. In particular, recommendations regarding the general landscaping and planting around the new development with native species with known wildlife benefits are also made.

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## 2.0. Introduction

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### 2.1. Background

J Taylor Ecology Consulting were commissioned by Mr. Andrew Steeden of York Associates, on behalf of Reading Borough Council, to undertake an Extended Phase 1 Habitat Survey in relation to the proposed new residential development at Lowfield Road in Reading, Berkshire RG4 6NF (approximate central OS grid reference SU730758).

The survey was required in conjunction with the submission of a planning application to construct seven pre-fabricated dwelling units each comprising of four two bedroom flats on two storeys, on the site of a former mobile home park. The site is linear in form, with a central access leading from Lowfield Road and running along the length of the site. The site adjoins Reading Cemetery and Crematorium and Caversham Park, a designated Historic Park/Garden.

Three dwelling units are proposed along the north eastern side of the access road, with the remaining four along the south west side. Each new dwelling unit would have allocated car parking spaces, along with drying, storage and refuse areas. Existing access to the site is to be retained off Lowfield Road, with pedestrian access along the existing footpaths either side of the access road. A communal amenity area is proposed at the northern end of the site, most likely to include a children's play space. Site wide landscaping is proposed, with significant areas of landscaping at either end of the site.

### 2.2. Site Context

The proposed site is located in the Caversham Park area of Reading to the south west of Lowfield Road, approximately 2.8km north east of Reading town centre. The site lies within the Reading Borough Council area, a single level unitary authority without civil parishes in the ceremonial county of Berkshire. The site area is approximately 0.6 hectares.

The site comprises of an area of currently disused land, following the removal of the mobile homes. Either side of the central access road, which runs along the length of the site, were a series of concrete foundation pads, some being complete pads and some being individual pillars. The vegetation surrounding the site had recently been cleared, and hence much of the site comprised of bare ground interspersed with ruderal vegetation. A small number of self-seeded young and early mature trees were present along the site boundary, mostly close to the site entrance and at the south eastern end of the site. A small utilities building was present close to the site entrance off Lowfield Road. No other buildings were present on the site.

Around the site boundary was a wooden close boarded wooden fence, the majority of which was in a poor state of repair, with the exception of a recently replaced section on the south western boundary. Hence, temporary Herras fencing had been installed on the inside along the fence line to maintain its integrity.

Beyond the site boundary to the north east of the site lay a strip of unmanaged scrub vegetation, approximately 10m wide, extending to Lowfield Road on the northern part of the boundary and to the rear gardens of 21-35 Lowfield Road along the southern part. Beyond Lowfield Road lay further medium density residential dwellings, with Farnham Drive Shopping precinct beyond. The strip of unmanaged vegetation extended around to the north west of the site, forming a boundary with Caversham Park beyond.

South west of the boundary fence lay the grounds of Henley Road Cemetery and Reading Crematorium, which extends for some distance westwards. Immediately beyond the fence was a small fenced off storage area, used primarily for soil storage, with burial plots throughout the remaining area. Beyond the south eastern boundary lay the dwelling of Orchard Grove, with its rear gardens extending to the boundary fence. The residential area extended further to the south east along Woods Road, Lowfield Green and Hawthorne Road, with the A4155 Henley Road forming the edge of the residential area.

For the purpose of this report, the “site” is defined as the area coloured pink on the Location Plan in Appendix 9.2. The study area is defined as a 2km radius from the site boundary. Photographs of the site are provided in Appendix 9.1, together with a detailed Phase 1 Habitat Survey Plan in Appendix 9.3.

### **2.3. Pre-existing information on the site**

No previously conducted ecological survey work was identified within the boundary of the site, or in close proximity. A desk study was undertaken as part of this assessment, with the location of statutory and non-statutory sites identified, along with records of any legally protected species within 2km of the site, together with any local or national Biodiversity Action Plan species.

### **2.4. Purpose**

The purpose of this ecological appraisal is as follows:

- To identify the broad habitat types present using the standard Phase 1 Habitat Survey methodology (JNCC 2010) and identify any key habitat features of the site and make a provisional assessment of the nature conservation value of the site and the importance of the features present at a local, national and international scale
- To assess the potential of the habitats on and around the site to support legally protected or Biodiversity Action Plan species.
- To identify any possible direct and indirect impacts of the proposed work on any ecological receptors present prior to the work commencing, during and post construction, including any legal implications or planning policy implications.
- To identify potential ecological constraints relating to the proposed development.
- To identify appropriate mitigation or compensation measures for the above and the need (or otherwise) for protected species mitigation licences.
- To identify opportunities for ecological improvement, in particular to recommend measures to ensure that the biodiversity value of the site would be maintained and enhanced where possible in accordance with Sections 109 and 118 of the National Planning Policy Framework (NPPF) 2012.

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## 3.0. Methodology

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### 3.1. Personnel

The field survey of the site was undertaken by Jonathan Taylor BEng (Hons) PGCert MSc MCIEEM on 18<sup>th</sup> February 2016. Jonathan is fully qualified practising Ecological Consultant with over 15 years experience and has an expert knowledge of ecological appraisals and impact assessments on an extensive range of habitats and species. He also has a practical understanding of factors affecting ecology in relation to construction and the built environment and regularly provides recommendations for ecological protection, enhancement and mitigation measures.

In particular he has an expert knowledge of bat ecology and legislation, from both formal training and working alongside experienced bat surveyors, and specialises in reptile and amphibian ecology, holding a Natural England Class Licence CL08 (Registration 2015-10258-CLS-CLS).

As a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), Jonathan adheres to the Institute's Code of Professional Conduct and professional ethics, and maintains a standard of knowledge and experience in accordance with the CIEEM Continuing Professional Development Policy.

### 3.2. Desk Study

A desk study was undertaken to identify the presence of any statutory designated wildlife sites and non-statutory designated sites within 2km of the site boundary. In addition, a search was undertaken for all legally protected or priority species of flora and fauna within the 2km area. The data obtained was analysed using ESRI ArcGIS Software. The following resources were consulted:

- The Multi Agency Geographic Information for the Countryside ([www.magic.gov.uk](http://www.magic.gov.uk)) for information on UK and European designated wildlife sites.
- Up to date Natural England Geographic Information System (GIS) Digital Boundary Datasets were imported as ESRI Shape files and viewed on ARC GIS Explorer to identify the location and extent of both statutory and non-statutory protected sites, including designated Ancient Woodland (<http://www.gis.naturalengland.org.uk/>).
- Information provided by Thames Valley Environmental Records Centre ([www.tverc.org.uk](http://www.tverc.org.uk)) was examined for information relating to any non-statutory protected sites within the study area.
- Further information provided by Thames Valley Environmental Records Centre, together with local sources and our own records, were used to identify any records of previously recorded protected and priority species.
- The UK Biodiversity Action Plan for information on national priority habitats and species (<http://jncc.defra.gov.uk/>). The UK Biodiversity Action Plan (UK BAP) is the national biodiversity strategy, prepared in response to the Rio Convention on Biological Diversity (1992). It was updated in 2007 and there are now 1150 UK BAP Priority Species and 65 UK BAP Priority Habitats.
- The Berkshire Local Nature Partnership (<http://berkshirelnp.org/>) was consulted for an indication of the habitats that have been targeted for conservation action in the local area, which identify key targets and priorities to prevent further wildlife and habitat loss and enhance biodiversity throughout Berkshire. There are presently no targets for BAP Priority Species as efforts are being focused on habitats and landscape scale projects.

- Within the Reading Borough Council Area, Policy CS36: Biodiversity and Geology of the Reading Borough Council Adopted Core Strategy sets out requirements and priorities in relation to biodiversity and planning.
- Ordnance Survey maps and aerial photographs were examined to identify all water bodies located within a 500m of the proposed development site. This was undertaken as great crested newts (*Triturus cristatus*) can use suitable terrestrial habitat up to 500m from a breeding pond (English Nature Report ENRR Number 576).

The desk study is valuable in identifying past records and nature conservation designations. Understanding nature conservation issues within the wider area helps in the assessment of the ecological value of the site, the habitats and species that the site may support. However, desk study data is not likely to be exhaustive and is intended mainly to set a context for the study. It is therefore possible that protected species not identified during the data search do occur within the vicinity of the proposed development site.

### 3.3. Field Survey

#### 3.3.1. Extended Phase 1 Habitat Survey

The Phase 1 Habitat Survey followed the standard methodology (JNCC 2010) and covered the proposed site including boundary features. In addition, habitats immediately adjacent and areas of the site not affected by the proposals but still considered to be suitable for protected species were also noted. All broad habitat types present were described, with the dominant plant species recorded and habitats classified according to their vegetation types. These are presented in the standard Phase 1 Habitat Survey format with habitat descriptions and a habitat map (Appendix 9.3). In order to supply additional information, target notes describe features of particular importance. Incidental records of birds and other fauna noted during the course of the habitat survey were also compiled. Plant species were recorded as encountered, together with estimates of cover and abundance where appropriate (on the DAFOR scale i.e. Dominant, Abundant, Frequent, Occasional, and Rare) and follows the nomenclature of Stace (1997) for vascular plant species.

An assessment was then made of the potential for the site to support protected species listed on Schedule 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), or those listed on the UK National Biodiversity Action Plan. The site was also examined for the presence of vascular plants listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or in the UK National Biodiversity Action Plan. The presence of any alien invasive species of plants listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed or giant hogweed, was also identified and their location recorded.

The site and a 50m zone around the site (where land access was permitted) were searched for the presence of badger setts and evidence of badger activity e.g. latrines, hairs, scrapes, footprints and run-throughs.

As part of the field survey a Preliminary Bat Appraisal was undertaken consisting of a visual inspection of the structure and condition of the small utilities building close to the site entrance off Lowfield Road and the trees along the boundary and in the immediate vicinity of the proposed working area, taking into account their age and species. The purpose of the appraisal was to establish the potential for bats to be present roosting within any of the trees. The assessment for bats was based on the guidance included in the Bat Conservation Trusts Bat Surveys - Good Practice Guidelines (Collins J. 2016) and Bat Workers Manual (JNCC 2010). The value of the wider area was also assessed for any foraging or commuting potential.

The age class for a tree is estimated based on its expected life span in its given situation, taking into account any defects, the form of the tree etc. The categories are Young (Y), Early Mature (EM – less than 1/3 of expected life span), Mature (M 1/3 to 2/3 of expected life span), Late Mature (LM – more than 2/3 of expected life span) and Veteran (V).

### 3.4. Evaluation

Following completion of the Phase 1 Habitat Survey, the ecological value of the site was evaluated using the guidance issued by the Institute of Ecology and Environmental Management (IEEM, 2006), which evaluates sites according to a geographic scale; significance at the international level down to the local level. The geographical value categories used in this assessment are: International (i.e. Europe), National (i.e. UK/England), County (i.e. Berkshire), District (i.e. Caversham), Local (i.e. the area around Lowfield Road and Site (i.e. within the immediate zone of influence). The evaluation categories for species are the same as those for habitats and where species are confirmed as present on site, estimation of the species value is given, having consideration to its distribution and status and historical trends. Examples of the factors that are considered in defining such ecological values are given in Appendices 9.4 and 9.5.

The potential for the site to provide habitats for protected species was assessed from field observations carried out at the same time as the Phase 1 Habitat Survey, combined with the results of the desk study. The likelihood of species occurrence is ranked as follows and relies on the findings of the current survey and an evaluation of results of the desk study. The Bat Conservation Trusts Bat Surveys - Good Practice Guidelines (Collins J. 2016) provides a protocol for assessing the likelihood of bat presence and this forms the basis for the evaluation criteria in relation to bats in trees.

**Negligible** – while presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species or species group. No relevant local results from a data search, surrounding habitat considered unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species. In relation to bats, the trees are assessed as Category 3 (Collins J. 2016), as having no potential to support bats, such as loose bark or obvious cracks or fissures. The trees are young or semi-mature specimens with a small girth, or species which do not tend to form fissures such as sycamore.

**Low** – on-site habitat of poor to moderate quality for a given species/species group. Few or no relevant results from data search, but presence cannot be discounted. In relation to bats, no evidence of bats was found during the survey. Trees fall under Category 2 (Collins J. 2016) being of no obvious potential such as cracks or fissures, but may have some ivy cover or loose bark. The trees may be surrounded by poor or sub-optimal bat foraging habitat.

**Moderate** – on-site habitat of moderate quality, providing all of the known key requirements of given species/species group. Local results identified from the data search and suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, habitat severance, and disturbance. For bats, on-site habitat provides all of the key requirements for bat presence, but no evidence of bats found. The trees on site are assessed as a Category 1 (Collins J. 2016) as trees with definite bat potential, as they contain some features suitable for roosting bats such as cracks or fissures or large amounts loose bark, and are predominantly semi-mature or mature specimens. This would have fewer suitable features than Category 1\* trees.

**High** – on-site habitat of high quality for given a species/species group. Relevant local records present from data search. The site is within/peripheral to a national or regional stronghold. Good quality surrounding habitat and good connectivity. In relation to bats, no evidence of bats found. The trees are assessed as Category 1\* tree defined as a trees with multiple, highly suitable features capable of

supporting larger roosts (Collins J. 2016). The trees contains features that are highly suitable for roosting bats, such as woodpecker holes, large cracks or crevices, and may have a hollow trunk.

**Present** – presence confirmed from the current survey or by recent confirmed records. The tree was found to contain conclusive evidence of occupation by bats, such as bat droppings.

### **3.5. Limitations**

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The ecological survey of the site has not therefore produced a complete list of plants and animals and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. However, the results of the survey enable an initial evaluation of the ecological value of the site to be made, together with an assessment of the potential for negative impacts and opportunities for enhancement.

It should be acknowledged that bats are highly mobile and may move between different roost sites throughout the year. In addition, new features such as cracks, crevices or openings may appear at any time. Hence the results of this survey are considered to be valid only at the time the survey was conducted.

The weather conditions were satisfactory at the time of the survey, and not considered to pose a constraint to the appraisal.

## 4.0. Results and Ecological Baseline

### 4.1. Desk Study

#### 4.1.1. Statutory Designated Sites

The following statutory designated wildlife site was identified within 2km of the site boundary.

**Table 1 – Statutory sites identified within the study area.**

| Site            | Designation | Grid Ref | Brief Description                                                                                                                                                                                  | Location |
|-----------------|-------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Clayfield Copse | LNR         | SU727772 | Ancient woodland with service trees and a wild pear tree, bluebells, common orchids and wood anemones. There are ancient boundary banks and ditches and plough baulks can be seen in the woodland. | 1150m NW |

**Local Nature Reserves (LNR)**- Designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act (1949). LNRs are normally greater than 2 hectares in size and of local interest.

#### 4.1.2. Non-Statutory Designated Sites

The following non-statutory sites were identified within 2km of the site. Non-statutory sites are protected through the planning system in accordance with the National Planning Policy Framework.

**Table 2 – Non- statutory sites identified within the study area.**

| Site                        | Designation | Grid Ref | Brief Description                                                                                                                                                                                                                                                                                          | Location  |
|-----------------------------|-------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Clayfield Copse             | LNR<br>AW   | SU724770 | A large, mainly natural open space consisting of fields and native woodlands. Some woodland is being actively managed as hazel coppice, and traditional dead hedging defines some of the ancient woodland areas. A wild flower meadow and other fields are being left to regenerate.                       | 1280m NW  |
| Blackhouse Wood             | AW          | SU729771 | Located adjacent to Clayfield Copse, of similar composition.                                                                                                                                                                                                                                               | 1100m N   |
| Rotherfield Way Copse       | LWS         | SU717760 | A small broadleaved woodland situated in a sheltered dry valley sloping moderately from NE to SW between roads and houses in Emmer Green, Reading.                                                                                                                                                         | 1280m WNW |
| Chambers Copse              | AW          | SU714771 | Within Reading Golf Club course.                                                                                                                                                                                                                                                                           | 1990m NW  |
| Old Cemetery, Victoria Road | LWS         | SU712755 | The cemetery has a diverse herbaceous flora, including at least six ancient woodland indicators – species that are usually more common in ancient woodland.                                                                                                                                                | 1850 WSW  |
| Hemdean Bottom              | LWS         | SU708762 | This is a mature beech woodland with a mix of other trees including large oaks and ash trees.                                                                                                                                                                                                              | 2065m W   |
| Furzplat                    | LWS         | SU710766 | A coppiced woodland with an informal path connecting to Gravel Hill.                                                                                                                                                                                                                                       | 1996m NW  |
| Highdown Wood (Beech Wood)  | AW          | SU711762 | Dominated by beech and known locally as Beech Wood, this woodland is a prominent landscape feature from the east. A woodland belt comprising mature oaks with a dense impenetrable shrubby understorey runs from the north of Beech Wood between Morlais and Highdown School to Tredagar Road in the north | 1748m W   |
| Round Wood                  | AW          | SU742773 | Area of ancient woodland in open countryside.                                                                                                                                                                                                                                                              | 1820m NE  |

**Ancient woodland (AW)** - Woodland which has existed at least since 1600 AD and is usually of much older origin. It contains stands of native trees that are not obviously planted. The sites are listed on Natural England's ancient woodland inventory.

**Local Wildlife Site (LWS)** - Are areas in Oxfordshire and Berkshire which include important and rare habitats and species.

#### 4.1.3. Protected and Biodiversity Action Plan Species (except birds)

The following legally protected and Biodiversity Action Plan species records were identified within 2km of the site. These are species listed on Schedule 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), Schedule 2 of the Conservation of Habitats and Species Regulations 2010 or those on the UK National Biodiversity Action Plan. In addition, records of badgers were also identified where possible. Results were limited to those that were 20 years old or less and some species omitted where they were assessed as not relevant to the assessment.

**Table 3 –Protected or BAP species identified within 2km of the site (except birds).**

| Species                                               | Protection Status                                     | Record Details                                                                                                                                                                                                        | Location                                                                                                                                                                         |
|-------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stag Beetle<br>( <i>Lucanus cervus</i> )              | D - Sch 5 Sec 9.5<br>E                                | 39 records within the study area<br>Both male and female mostly in private gardens.                                                                                                                                   |                                                                                                                                                                                  |
| White-letter Hairstreak<br>( <i>Satyrus w-album</i> ) | D - Sch 5 Sec 9.5<br>E                                | Clayfield Copse                                                                                                                                                                                                       | SU725772 1490m NNW                                                                                                                                                               |
| Small Blue<br>( <i>Cupido minimus</i> )               | D - Sch 5 Sec 9.5<br>E                                | Field record                                                                                                                                                                                                          | SU712766                                                                                                                                                                         |
| Purple Emperor<br>( <i>Apatura iris</i> )             | D - Sch 5 Sec 9.5                                     | Garden; Emmer Green; Reading                                                                                                                                                                                          | SU723775                                                                                                                                                                         |
| Smooth Newt<br>( <i>Lissotriton vulgaris</i> )        | D - Sch 5 Sec 9.5                                     | Caversham<br>Caversham, S of A4155<br>Caversham, Berry Brook.                                                                                                                                                         | SU727751 760mSSW<br>SU727751 760m SSW<br>SU728749 920m SSW                                                                                                                       |
| Common Toad<br>( <i>Bufo bufo</i> )                   | D - Sch 5 Sec 9.5                                     | 22 records within the study area, the majority in Caversham south of A4155.                                                                                                                                           |                                                                                                                                                                                  |
| Common Frog<br>( <i>Rana temporaria</i> )             | D - Sch 5 Sec 9.5                                     | 17 records 22 records within the study area                                                                                                                                                                           |                                                                                                                                                                                  |
| Slow-worm<br>( <i>Anguis fragilis</i> )               | D - Sch 5 Sec 9.1<br>D - Sch 5 Sec 9.5<br>E           | 3 records at 104 Blenheim Road<br>Single records in Caversham                                                                                                                                                         | SU71117599 1900m W<br>SU713749 1920m WSW                                                                                                                                         |
| Grass snake<br>( <i>Natrix natrix</i> )               | D - Sch 5 Sec 9.1<br>D - Sch 5 Sec 9.5<br>E           | The Coal<br>Caversham<br>A4155, S of<br>Caversham<br>Reading<br>Gardens adjacent to Berry Brook<br>Thames Valley Park<br>Thames Valley Park                                                                           | SU727740 1820m S<br>SU727751 760m SSW<br>SSU72751 760m SSW<br>SU728752 630m SSW<br>6 records at SU729751 710m S<br>SU73227527 570m SSE<br>SU743746 1770m E<br>SU745746 1920m SE  |
| Adder<br>( <i>Vipera berus</i> )                      | D - Sch 5 Sec 9.1<br>D - Sch 5 Sec 9.5                | 6 All Hallows Road                                                                                                                                                                                                    | SU72867532 500m S                                                                                                                                                                |
| European Otter<br>( <i>Lutra lutra</i> )              | C<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5<br>E | Henley Road Gravel Pit.<br>River Thames<br>River Thames<br>River Thames                                                                                                                                               | SU734744 1460m SSE<br>SU7406774440 1730m SE<br>SU7429774663 1730m SE<br>SU7472874765 2000m ESE                                                                                   |
| Eurasian Badger<br>( <i>Meles meles</i> )             | A                                                     | Victoria Rd Cemetery<br>Single record<br>4 records<br>Single record<br>Single record<br>2 records<br>2 records<br>Micklands Primary School<br>Clayfield Copse<br>Single record<br>2 records<br>2 records<br>2 records | SU71187551 1840m W<br>SU7174<br>SU7175<br>SU7273<br>SU7274<br>SU7276<br>SU7277<br>SU72867545 380m SSSW<br>SU729771 1300m N<br>SU73237683 1060m NNE<br>SU7375<br>SU7376<br>SU7476 |

| Species                                                     | Protection Status                                                        | Record Details                                                                                                                                                                                                                        | Location                                                                                                                                                                |
|-------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Polecat<br>( <i>Mustela putorius</i> )                      | E                                                                        | Spring Lane between Flowing Spring pub and Sonning Eye                                                                                                                                                                                | SU748763 1870m ENE                                                                                                                                                      |
| Water vole<br>( <i>Arvicola amphibius</i> )                 | D - Sch 5 Sec 9.1<br>D - Sch 5 Sec 9.4(a, b&c)<br>D - Sch 5 Sec 9.5<br>E | Thames Valley Park                                                                                                                                                                                                                    | SU740743 1800m SE                                                                                                                                                       |
| Unidentified bat<br>( <i>Myotis</i> )                       |                                                                          | Yarnton Close, Emmer Green<br>Mayfield Drive, Caversham<br>Emmer Green<br><br>Single record<br>2 records                                                                                                                              | SU7176<br>SU722769 1360m NW<br>SU726753 640m SW<br><br>SU7274<br>SU7276                                                                                                 |
| Daubenton's Bat<br>( <i>Myotis daubentonii</i> )            | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5                         | Jefferson Close Scout Hut                                                                                                                                                                                                             | SU72337714 1500m NNW                                                                                                                                                    |
| Natterer's Bat<br>( <i>Myotis nattereri</i> )               | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5                         | Jefferson Close Scout Hut                                                                                                                                                                                                             | SU72337714 1500m NNW                                                                                                                                                    |
| Lesser Noctule<br>( <i>Nyctalus leisleri</i> )              | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5<br>E                    | Single record                                                                                                                                                                                                                         | SU7176                                                                                                                                                                  |
| Noctule Bat<br>( <i>Nyctalus noctula</i> )                  | B                                                                        | Clayfield Copse, Earley,<br>Reading, Breeding roost in tree<br><br>Single record<br>Single record                                                                                                                                     | SU7176<br>SU724769 1250m NNW<br><br>SU7275<br>SU7276                                                                                                                    |
| Pipistrelle Bat species<br>( <i>Pipistrellus</i> )          | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5                         | Single record<br>Caversham<br>2 records<br>Single record<br>Caversham<br>Single record<br>Single record<br>Single record<br>Single record<br>Single record<br>Single record                                                           | SU710758 2000m W<br>SU712753 1870m WSW<br>SU7175<br>SU7177<br>SU721753 1870m WSW<br>SU7274<br>SU7275<br>SU7276<br>SU7276<br>SU7277<br>SU7277                            |
| Nathusius's Pipistrelle<br>( <i>Pipistrellus nathusii</i> ) | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5                         | Caversham, Reading.<br>Single record                                                                                                                                                                                                  | SU715755 1530m WSW<br>SU7175                                                                                                                                            |
| Common Pipistrelle<br>( <i>Pipistrellus pipistrellus</i> )  | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5                         | Oxford Street, RG4 8HN<br>2 records<br>Maddock Building, Queen Anne's School, Caversham<br>Single record<br>Single record<br>2 records Dunsden Farmhouse,<br>2 records<br>Single record<br>2 records<br>Singl record<br>Single record | SU71467496 1750m WSW<br>SU7176<br>SU71797511 1390m SE<br><br>SU7273<br>SU7276<br>SU7353277276 1570m<br>NNE SU7401277266 1780 NE<br>SU7175<br>SU7176<br>SU7276<br>SU7277 |

| Species                                                 | Protection Status                                     | Record Details                                                                                                                                                                                                                                                                                                 | Location                                                                                                                                                                                                                               |
|---------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Soprano Pipistrelle<br>( <i>Pipistrellus pygmaeus</i> ) | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5<br>E | Single record<br>Single record<br>Single record<br>Single record<br>Single record                                                                                                                                                                                                                              | SU7175<br>SU7176<br>SU7176<br>SU7276<br>SU7277                                                                                                                                                                                         |
| Long-eared Bat species<br>( <i>Plecotus</i> )           | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5<br>E | Single record<br>Single record                                                                                                                                                                                                                                                                                 | SU7275<br>SU7276                                                                                                                                                                                                                       |
| Brown Long-eared Bat<br>( <i>Plecotus auritus</i> )     | B<br>D - Sch 5 Sec 9.4(b&c)<br>D - Sch 5 Sec 9.5<br>E | Hemdean Rise, Caversham<br>Emmer Green, Reading<br>21 Brooklyn Drive, RG4 8SR<br>Single record<br>3 records<br>Maddock Building, Queen Anne's<br>School, Caversham<br>Emmer Green<br>Jefferson Close Scout Hut<br>Single record<br>Dunsden Farmhouse 2 records<br>Dunsden Farmhouse 2 records<br>Single record | SU71237505 1920m WSW<br>SU715765 1660m WNW<br>SU71657691 1750m WNW<br>SU7175<br>SU7176<br>SU71797511 1390m WSW<br><br>SU719769 1560m NW<br>SU72337714 1500m NNW<br>SU7276<br>SU7353277276 1570m NNE<br>SU7401277266 1780m NE<br>SU7474 |

- A. **Protection of Badgers Act 1992.** Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett. The term 'badger sett' is normally understood to mean the system of tunnels and chambers, in which badgers live, and their entrances and immediate surrounds.
- B. **Conservation (Natural Habitats) Regulations 2010** – Offence to damage, destroy or obstruct access to any place a bat uses for shelter or protection, whether it is occupied by bats at the time or not, or to disturb a bat whilst it is in such a place. It is also an offence to intentionally or recklessly kill, injure or handle a bat, or to possess a bat whether dead or alive.
- C. **Conservation (Natural Habitats) Regulations 2010** – Offence to intentionally or recklessly kill, injure, disturb or sell. Offence to intentionally or recklessly disturb, damage or destroy a breeding site or resting place, or to take or destroy eggs.
- D. **Wildlife & Countryside Act 1981** – The Wildlife and Countryside Act consolidates and amends existing national legislation to implement the Bern Convention and the EU Birds Directive in Great Britain. Various amendments have been made to the Act, e.g. in the Countryside and Rights of Way (CROW) Act 2000.
- Schedule 5 (protected animals, other than birds) – The intentional or reckless killing, injuring, taking, possessing, disturbing or selling, of animals listed in Schedule 5 is prohibited, along with the damaging or disturbing of the places used for their shelter or protection. Protection of some species is limited to certain sections:
- Section 9.1 – Limited to intentional killing, injury or taking.
  - Section 9.4a – Limited to damaging, destroying or obstructing access to any structure or place used by the animal for shelter or protection.
  - Section 9.4b – Limited to disturbing an animal whilst it is occupying any structure or place used for shelter or protection.
  - Section 9.4c – Limited to obstruction of access to any structure or place which any such animal uses for shelter or protection.]
  - Section 9.5 – Limited to selling, offering for sale, possessing or transporting for sale or advertising for sale of any live or dead animal, part of or derived from.
- E. **UK Biodiversity Action Plan Species.** UK Biodiversity Action Plan Priority species and Species of Principal Importance. The UK Biodiversity Action Plan lists Priority species for conservation in the UK. The species list was reviewed and extended in 2007. The list of Species of Principal Importance was originally published under Section 74 of the Countryside and Rights Way Act 2000, and carried forward into the NERC Act 2006.

#### 4.1.4. Protected and Biodiversity Action Plan Bird Species

The desk study also identified a number of Wildlife and Countryside Act 1981 Schedule 1 Part 1 and Part 2 birds (which provides additional protection against disturbance whilst nesting) and UK Biodiversity Action Plan species within the study area.

**Table 4 –Protected and BAP bird species identified within 2km of the site.**

| Species                                            | Designation                                                 |
|----------------------------------------------------|-------------------------------------------------------------|
| Greylag Goose <i>Anser anser</i>                   | Wildlife and Countryside Act 1981 Schedule 1 Part 2 Species |
| Pintail <i>Anas acuta</i>                          | Wildlife and Countryside Act 1981 Schedule 1 Part 2 Species |
| Garganey <i>Anas querquedula</i>                   | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Scaup <i>Aythya marila</i>                         | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Common Scoter <i>Melanitta nigra</i>               | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Goldeneye <i>Bucephala clangula</i>                | Wildlife and Countryside Act 1981 Schedule 1 Part 2 Species |
| Great Northern Diver <i>Gavia immer</i>            | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Black-necked Grebe <i>Podiceps nigricollis</i>     | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Honey-buzzard <i>Pernis apivorus</i>               | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Red Kite <i>Milvus milvus</i>                      | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Hobby <i>Falco subbuteo</i>                        | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Little Ringed Plover <i>Charadrius dubius</i>      | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Green Sandpiper <i>Tringa ochropus</i>             | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Little Gull <i>Hydrocoloeus minutus</i>            | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Black Tern <i>Chlidonias niger</i>                 | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Barn Owl <i>Tyto alba</i>                          | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Kingfisher <i>Alcedo atthis</i>                    | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Fieldfare <i>Turdus pilaris</i>                    | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Redwing <i>Turdus iliacus</i>                      | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Brambling <i>Fringilla montifringilla</i>          | Wildlife and Countryside Act 1981 Schedule 1 Part 1 Species |
| Grey Partridge <i>Perdix perdix</i>                | UK Biodiversity Action Plan Species                         |
| Lapwing <i>Vanellus vanellus</i>                   | UK Biodiversity Action Plan Species                         |
| Curlew <i>Numenius arquata</i>                     | UK Biodiversity Action Plan Species                         |
| Herring Gull <i>Larus argentatus</i>               | UK Biodiversity Action Plan Species                         |
| Turtle Dove <i>Streptopelia turtur</i>             | UK Biodiversity Action Plan Species                         |
| Cuckoo <i>Cuculus canorus</i>                      | UK Biodiversity Action Plan Species                         |
| Lesser Spotted Woodpecker <i>Dendrocopos minor</i> | UK Biodiversity Action Plan Species                         |
| Wood Warbler <i>Phylloscopus sibilatrix</i>        | UK Biodiversity Action Plan Species                         |
| Skylark <i>Alauda arvensis</i>                     | UK Biodiversity Action Plan Species                         |
| Yellow Wagtail <i>Motacilla flava</i>              | UK Biodiversity Action Plan Species                         |
| Dunnock <i>Prunella modularis</i>                  | UK Biodiversity Action Plan Species                         |
| Song Thrush <i>Turdus philomelos</i>               | UK Biodiversity Action Plan Species                         |
| Spotted Flycatcher <i>Muscicapa striata</i>        | UK Biodiversity Action Plan Species                         |
| Marsh Tit <i>Poecile palustris</i>                 | UK Biodiversity Action Plan Species                         |
| Starling <i>Sturnus vulgaris</i>                   | UK Biodiversity Action Plan Species                         |
| House Sparrow <i>Passer domesticus</i>             | UK Biodiversity Action Plan Species                         |
| Linnet <i>Linaria cannabina</i>                    | UK Biodiversity Action Plan Species                         |
| Bullfinch <i>Pyrrhula pyrrhula</i>                 | UK Biodiversity Action Plan Species                         |
| Yellowhammer <i>Emberiza citrinella</i>            | UK Biodiversity Action Plan Species                         |
| Reed Bunting <i>Emberiza schoeniclus</i>           | UK Biodiversity Action Plan Species                         |

#### 4.1.5. Water body Search

Ordnance Survey maps and aerial photographs were examined and no water bodies were identified within 500m of the site. However, given the urban nature of the surrounding area, it is possible that small garden ponds exist that are not identifiable on Ordnance Survey maps or aerial photographs.

## 4.2. Field Survey Results

### Flora and Habitats

The following habitats were recorded in line with the standard Phase 1 Habitat Classification (JNCC 2010) as present on the site. The following section should be read in conjunction with the Extended Phase 1 Habitat Plan within Appendix 9.3.

No species or flora listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or Biodiversity Action Plan priority species were observed within the proposed development site.

**Scattered broadleaved trees (A3.1):** A small number of self-seeded scattered broadleaved trees were present close to the boundary fence in a number of locations. An early mature sycamore (*Acer pseudoplatanus*) T1 was present close to the north western corner of the site, growing adjacent to the fence line (photograph 8). The tree was of poor form and structure, being multi stemmed and subject to the conspicuous fungal leaf spot disease *Rhytisma acerinum*. Further along the south western boundary was a single early mature ash (*Fraxinus excelsior*) T2, directly on the boundary fence line. The tree was again self-seeded and multi stemmed.

In the south western corner of the site was a group of six trees, two adjacent to the south western boundary and four along the south eastern boundary. Along the south western boundary was a mature cherry (*Prunus sp.*) T3, generally in good condition. Further towards the southern corner of the site was an early mature elder (*Sambucus nigra*) T4, which was low in form with a dense multi stemmed crown. Close to the southern corner of the site along the south eastern boundary was a mature goat willow (*Salix caprea*) T5. The tree was the largest on the site with a wide crown and was located approximately 1m in from the site boundary. Again the tree was self-seeded and multi-stemmed with some basal growth (photograph 12). Further along the south eastern boundary were three adjacent trees, comprising of two early mature oak trees (*Quercus robur*) ,T6 and T8, along with a young cherry T7 in between.

Either side of the access off Lowfield Road were a small number of self-seeded trees. Along the northern side of the access were two young elder trees T9 and T10 growing from the base of the fence line. A further two young elder trees (T11 and T12) were present at the base of the conifer tree beyond the side entrance gate. Along the southern side of the access were four trees, located either side of small utilities building. Closest to the site entrance was an early mature sycamore T13, which was in poor condition and multi stemmed. Growing to the rear of the utilities building was an early mature elder T14), which was dense in form and growing over the roof of the building. West of the utilities building were two adjacent sycamore trees T15 and T16, with the closest being early mature in age and a young sycamore intertwined at the base. Both trees were again self-seeded.

**Scattered coniferous trees (A3.2):** A single mature Lawson cypress (*Chamaecyparis lawsoniana*) T17, was present just outside the site entrance gate on the northern side. The tree was located in an area of short grassland which formed part of the roadside verge. The tree, which had two young elder trees (T11 and T12) growing through it at the base, was of substantial form, being approximately 9m high (photograph 2).

**Tall ruderal vegetation (C3.1):** Ruderal vegetation was present across much of the site, interspersed with areas of the bare ground. At the time of the visit, the vegetation was short and sparse, following the vegetation clearance that is understood to have occurred during the previous autumn. The clearance had resulted in heavily poached ground, with the vegetation having been cut to ground level. Hence there was little floral diversity, with just sparse areas of common low growing ruderal vegetation present at the time of the visit. The foundations of the mobile homes were visible across the interior of the site, with concrete plinths and pad foundation extending around 0.5m above ground level. Across the site were also some scattered rubbish typical of an urban site, with sand and aggregate piles in places. The density of the small amount of vegetation present varied with the substrate, as there were former hard standing/ asphalt / gravel areas which limited vegetation growth.

The vegetation at the time of the survey was dominated by nettle (*Urtica dioica*), perennial ryegrass (*Lolium perenne*), creeping thistle (*Cirsium arvense*), narrow leaved plantain (*Plantago lanceolata*), bramble (*Rubus fruticosus*), ivy (*Hedra helix*) and slender willowherb (*Epilobium ciliatum*), with abundant bristly oxe-tougue (*Picris echioides*), smooth sow thistle (*Sonchus oleraceus*), lesser burdock (*Arctium minus*), and cinquefoil (*Potentilla* sp.) and ground ivy (*Glechoma hederacea*). There was frequent cleavers (*Galium aparine*), buttercup (*Ranunculus repens*), blackthorn saplings (*Prunus spinosa*) and sycamore. There was also occasional geranium (*Geranium* sp.), daffodil (*Narcissus* sp.) herb robert (*Geranium robertianum*) and rare sedum (*Sedum* sp.).

**Fence (J2.4):** The site was enclosed around the boundary by a close boarded wooden fence, the majority of which was in a poor state of repair, with the exception of a recently replaced section on the south western boundary. Hence, temporary Herras fencing had been installed on the inside along the fence line to maintain its integrity. There were no significant vegetation communities associated with the fence.

**Bare ground (J4):** Around the areas of ruderal vegetation were patches of bare ground. The bare ground appeared to have arisen partly as a result of the poaching and compaction from the site clearance, and partly due to the presence of older areas of hard standing and gravel areas.

**Buildings (J3.6):** A small utilities building was present close to the site entrance off Lowfield Road. The building was constructed from a single thickness of pre-cast concrete blocks with double wooden doors on the front northern elevation. The roof was a single pitch pent roof gently sloping to the rear. It was covered with roofing felt with a deep wooden fascia board.

## Faunal Species

### Badger (*Meles meles*):

The desk study identified twenty-one records of badger within the 2km study area. The closest record identified was located 380m to the south southwest of the site near to Micklands Primary School, although there were two further records identified within the 1km grid square of the site.

No evidence of badger activity or field signs indicating either current or previous use of the site was observed within the site boundary. The interior site is not considered suitable given the lack of cover, dominance of short ruderal vegetation and bare ground, together with the urban location of the site giving rise to high level of disturbance and lighting.

The wider area is also considered to be largely unsuitable for use by badgers, given the immediate urban area. However there is some small areas of suitable habitat within Caversham Park to the north, and to a lesser extent in the Cemetery to the west, although there are no records or evidence to suggest badgers are present. In addition, although there are some small areas of suitable habitat, both Caversham Park and the Cemetery are subject to high levels of use, giving rise to excessive

disturbance. Hence the distance to the habitat more likely to be suitable is in excess of 1km to the north northeast, in the area of Clayfield Copse and Blackhouse Wood and there is no suitable connected habitat that would allow badgers to reach the site.

Therefore, it is concluded that the likelihood of badger setts being present within the site is negligible according to the criteria in Section 3.4.

**Reptiles:** The desk study identified records of slow-worm (*Anguis fragilis*), grass snake (*Natrix natrix*) and adder (*Vipera berus*) within the study area. Four records of slow worm were identified, the closest of which were three records at a domestic dwelling on Blenheim road, 1900m to the west of the site. The closest grass snake record was in a garden in a dwelling adjacent to Berry Brook, 570m to the south southeast of the site. A further 12 records of grass snake were in the study area. Just a single record of adder was identified, located 500m to the south of the site at All Hallows Road.

No reptiles or evidence of reptiles were identified during the site survey.

The interior of the site was considered to be largely unsuitable for reptiles at the time of the survey, given the recent disturbance from the site clearance, and the vegetation comprised of sparse ruderal plants that had re-grown since the clearance amongst significant areas of bare ground. There were also significant areas of hard standing in the form of the access road and form mobile home foundations. Such habitat offers little cover or foraging opportunities for reptiles.

The wider area surrounding the site is also considered largely unsuitable for reptiles, given the high density of housing and road network, although it is possible that small populations of slow worm in particular may be present in areas of suitable habitat within Caversham Park or the Cemetery grounds to the west. These adjoining sites may act as a reserve for the movement of reptiles around the area, although it is unlikely that a significant numbers are present, given the absence of records and intensive use of both sites.

Although currently the site is considered largely unsuitable for reptiles, there is the potential for the suitability to increase should the vegetation continue to grow and the site remain unused and derelict, particularly if the site is not maintained in its current state. If there are small number of reptiles present within the areas of suitable habitat within Caversham Park or the Cemetery grounds, it is possible that they may move into the site.

Hence, it is currently considered that the interior of the site has negligible likelihood of reptile presence. However, should the management of the site cease and the vegetation be allowed to grow and become established, there is potential for that likelihood to increase to low or medium, depending on the duration and nature of any future management of the site.

**Great Crested Newt (*Triturus cristatus*):** No records of great crested newts were identified within the study area, and no ponds were identified within 500m of the site. In addition, given the recent disturbance from the site clearance, the sparse ruderal vegetation and significant areas of bare ground, it was not considered suitable for use by great crested newts. Hence the likelihood of great crested newts being present in the proposed working area is considered negligible according to the criteria in Section 3.4.

**Birds:** The trees on the boundary of the site contained habitat suitable for bird nesting to occur, with a single redundant nest identified in the sycamore T1 on the north western corner of the site. In addition, beyond the site boundary fence was an establish area of mixed scrub, which was also considered suitable for use by nesting birds. However, there was no suitable bird nesting habitat in the interior of the site, given the absence of vegetation.

A small number of common bird species were identified during the survey, none of which have statutory or non-statutory protection. The desk study identified a number of Wildlife and Countryside Act 1981 Schedule 1 Part 1 and 2 birds (Section 4.1.4, Table 4) and UK Biodiversity Action species within the study area. None of these species are likely to rely on any of the areas of habitat within the site that will be impacted on by the proposals.

Given that it may be necessary to remove some or all of the self-seeded trees along the boundary of the site, together with the potential proximity of the scrub habitat beyond the boundary fence, there is the risk of indirect impact or disturbance to individual nesting birds. Given the small scale of the impact, and presence of alternative nesting habitat nearby, it is assessed as highly unlikely to result in any impact upon the conservation status of birds in the local area. However, all nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended).

**Common Dormouse (*Muscardinus avellanarius*):** No records of dormouse were identified within the study area and no signs of dormouse presence were found during the site survey.

The interior of the site lacked any suitable vegetation for dormouse, being composed of low ruderal vegetation, bare ground and hard standing. Outside of the site boundary were some areas of mixed scrub, which was considered for its potential to support dormice given the proximity to the working area. However the vegetation was found to be insufficiently diverse, and lacked any hazel or successional fruiting species required by dormice (Bright et al., 1996). In addition, the scrub areas were subject to high levels of disturbance from the adjoining land use. Hence, it is considered that the likelihood of finding common dormice is negligible according to the criteria in Section 3.4.

**Bats (*Chiroptera*):** The desk study identified records of eight species of bat within the study area, Daubenton's Bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), noctule bat (*Nyctalus noctula*), lesser noctule (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Nathusius's pipistrelle (*Pipistrellus nathusii*) and brown long-eared bat (*Plecotus auritus*).

All the records identified were in excess of 1000m from the site boundary, with no records identified within the 1km grid square of the site (SU7375). The closest being a single record of noctule bat breeding in a tree roost 1250m to the north northwest of the site. The next closest record was for a common pipistrelle and brown long eared bat records 1390m to the south east, recorded roosting at the Maddock Building in Queen Anne's School.

A single building was present on the site. This was a small utilities building (photograph 9) close to the site entrance on the south eastern boundary of the site. All external elevations of the building were carefully inspected for signs of current use by bats, together with a thorough inspection of the roof area. A thorough internal inspection of the interior was also conducted and was examined for evidence of bat droppings or feeding remains (particularly butterfly & moth wings).

The building was constructed from a single thickness of pre-cast concrete blocks with double wooden doors on the front northern elevation. The roof was a single pitch pent roof gently sloping to the rear, covered with roofing felt with a deep wooden fascia board. The block work was in good condition with no cracks or crevices that could be used by crevice dwelling bats. The wooden fascia board was fixed flat against the block work, and was damp and rotten in places, and hence considered unsuitable for use by bats. The interior of the building was damp and draughty, partly due to the wooden doors not closing properly, and partly from the cable openings at the base of the building. Water was clearly running down the inside walls of the building, and damp and rot was visible on the underside of the roof. There was no evidence of use by bats. In addition, the building was considered to be of insufficient size to offer any roosting opportunities for roof void dwelling bats, as they require adequate flight space in which to roost.

No evidence of use of the building was identified, and no suitable crevice features were found. The building was not considered suitable for use by crevice dwelling bats, given the small size, single thickness construction and draughty, damp conditions. Hence the likelihood of bat presence in the utility building was assessed as negligible, according to the criteria in Section 3.4.

All the trees on the site were then inspected for their suitability to support roosting bats. The mature goat willow (T5, target note 1) located close to the southern corner of the site along the south eastern boundary was found to have some dead wood, mostly likely resulting from wind damage as is typical with goat willow trees. These features had resulted in a small number of cracks and fissures forming, which were visually inspected. The features were mostly upward facing and hence subject to rain intrusion. Being multi-stemmed with a wide crown, the boughs were small and hence the features were generally not large enough to be used by the common tree dwelling bats, such as noctule. Hence the goat willow (T5) was assessed as having low likelihood of use by bats (Category 2, Collins J. 2016)

All of the remaining trees within the site boundary were generally intact and in good condition, being immature and hence not of sufficient age to form cracks and fissures used by bats. This includes the single mature Lawson cypress T17, which is present just outside the site entrance gate on the northern side. Conifer trees are generally not used by bats, as they have dense foliage that mostly prevents access to the trunk, and an absence of large side branches. Hence the remaining trees were assessed as having a negligible likelihood of being used by roosting bats (Category 3, Collins J. 2016), according to the criteria in Section 3.4.

Internally the site offers little foraging opportunities for bats. However, the vegetation beyond the boundary, particularly the areas of suitable habitat within Caversham Park or the Cemetery grounds to the west are likely to offer more significant foraging opportunities. In addition, the records from the desk study indicate that bats are present in the wider area.

Therefore, although no habitat of value to bats will be directly affected by the proposals, there is the potential for a significant increase in disturbance and lighting which has the potential to impact on the wider population status both during construction and use. Research has found that bats are sensitive to artificial lighting and that excessive lighting can cause bats to move away from suitable foraging grounds to alternative dark areas (Jones 2000).

**Polecat (*Mustela putorius*)** - The desk study identified a single record of polecat within the study area, which is a UK Biodiversity Action Plan species. The record was 1870m east north east of the site, along Spring Lane between The Flowing Spring public house and Sonning Eye.

A member of the weasel family (*Mustelids*), polecats have suffered relentless persecution by gamekeepers up until the late 1930s but they have since recovered and are now found throughout rural Wales, and across the Midlands, the South and into the South East. They are solitary in nature and active throughout the year. Their favoured habitat is woodland, riverbank and surrounding farmland and have a large territory (up to 500ha for male). Polecat dens are commonly found in rabbit burrows, especially in summer, but they frequently move into farmyards in winter, when they may den in hay bales, under sheds and in rubbish tips.

Given the general absence of rabbit burrows on the site and that polecats use such a large territory, it is considered there is unlikely to be any impact to either individuals or their conservation status as a result of the proposals. It is therefore considered that there is a negligible likelihood of polecat being present.

**Stag Beetle (*Lucanus cervus*)**: The desk study identified thirty-nine records of stag beetle within the study area, with both male and female stag beetles records mostly in private gardens throughout the study area.

No evidence of stag beetles utilising the site was found during the survey. Stag beetle larvae occupy moist dead wood, usually below ground, in tree stumps, large fallen logs or occasionally fence posts. It usually takes 3 to 5 years for stag beetles to reach maturity and hence they need to remain undisturbed over this period. There was no loose or dead wood identified anywhere on the site.

However, it was considered that the trees, shrubs and nearby houses could provide sheltered habitat for adult stag beetles during early summer.

**Moths/ Butterflies (*Lepidoptera*):** The desk study identified a number of UK Biodiversity Action Plan *Lepidoptera* within the study area, although almost all were recorded within designated Local Wildlife Sites. Given the recent disturbance from the site clearance, and as the site predominantly comprises of sparse ruderal vegetation amongst areas of bare ground and hard standing, there is an absence of suitable habitat and hence the likelihood of their presence is considered negligible.

**Other Protected Species:** No other protected or priority species were found during the survey. The proposed working area does not support habitat considered suitable for water vole (*Arvicola amphibius*), otter (*Lutra lutra*), or white-clawed crayfish (*Austropotamobius pallipes*).

**Invasive Species:** No invasive species which are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified during the survey.

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## 5.0. Legislative and Planning Context<sup>1</sup>

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### 5.1. Legislation and Policy

#### 5.1.1. The Conservation of Habitats and Species Regulations 2010

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. All bat species together with otters, dormouse and great crested newts are listed under Schedule 2 and hence are protected by Regulation 39 as below.

39. 1) It is an offence—

- (a) deliberately to capture or kill a wild animal of a European protected species;
- (b) deliberately to disturb any such animal;
- (c) deliberately to take or destroy the eggs of such an animal; or
- (d) to damage or destroy a breeding site or resting place of such an animal.

(2) It is an offence to keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

(3) Paragraphs (1) and (2) apply to all stages of the life of the animals to which they apply.

#### 5.1.2. Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive). Animals listed under Schedule 5, including all species of bats and reptiles, receive full or partial protection under Section 9. Further details on the provisions of Section 9 of the Wildlife and Countryside Act 1981 (as amended) are provided in Section 4.1.3.

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting. Section 1 of the Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs. In addition, bird species listed under Schedule 1 of the Act receive extra protection. The Act states that 'it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'.

The Wildlife and Countryside Act 1981 states that it is an offence to "plant or otherwise cause to grow in the wild" any plant listed in Schedule nine, Part II of the Act. This lists over 30 plants including Japanese knotweed, giant hogweed and parrot's feather.

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<sup>1</sup> Please note that this legal information is a summary and intended for general guidance only. The information provided in this report constitutes the opinion of a professional ecologist and does not constitute legal advice. The original legal documents should be consulted for definitive information. Web addresses to the full text of these documents are given in Section 8.

### **5.1.3. Protection of Badgers Act 1992**

In England, badgers are protected under the Protection of Badgers Act 1992, which makes the following actions illegal to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so. This includes:

- interference with a sett by damaging or destroying it;
- obstruction of access to, or any entrance of, a badger sett; and
- disturbance of a badger when it is occupying a sett.

A badger sett is defined in the legislation as 'any structure or place which displays signs indicating current use by a badger'. A sett is therefore protected as long as signs of use remain present. In practice, this could potentially be for a period of several weeks after the last actual occupation of the sett by a badger or badgers (Natural England 2009). It should be noted that although the badger and its sett are protected (including access to the sett) the wider potential habitat and or foraging ground is not.

The legislation recognises the fact that in some cases, development would constitute an offence and allows licences to be granted for certain purposes permitting work, which would otherwise be illegal. Natural England is the licensing authority for sett interference (including obstruction, damage or closure) or disturbance to badgers within setts which result from land development.

### **5.1.4. Biodiversity Action Plans**

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and Local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels. Hedgehogs are listed on the National BAP.

### **5.1.5. Planning Context**

The Biodiversity Action Plan species which the Government expects to be considered in planning applications are those listed in Section 41 (in England) of the Natural Environment and Rural Communities Act 2006. These are the species found in England which have been identified as requiring action under the UK BAP.

The National Planning Policy Framework (NPPF), published on 27 March 2012, sets out current government policy on biodiversity and nature conservation. This places a duty on the Planning Authority to make the effect of a development on protected species (and habitats) a material consideration when considering planning applications. The NPPF also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development.

Within the Reading Borough Council Area, Policy CS36: Biodiversity and Geology of the Reading Borough Council Adopted Core Strategy sets out requirements and priorities in relation to biodiversity and planning.

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## 6.0. Ecological Evaluation and Identification of Potential Impacts

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### 6.1. Designated Areas

A single statutory designated site was identified within the study area. Clayfield Copse Local Nature Reserve is 1150m to the north west of the site, adjacent to open countryside and forms the urban boundary of western Reading. Local Nature Reserves area designated under the National Parks and Access to the Countryside Act 1949, normally by the local authority, as wildlife or geological features that are of special interest locally. The site is also designated as a Local Wildlife Site and Ancient Woodland (see below). It is a large, mainly natural open space consisting of fields and native woodlands. Some woodland is being actively managed as hazel coppice, and traditional dead hedging defines some of the ancient woodland areas. A wild flower meadow and other fields are being left to regenerate woodland. It was designated as a Reading Nature Reserve in 1991 and owned and managed by Reading Borough Council.

In addition, nine non-statutory wildlife sites were identified within the study area, which are protected through the planning system in accordance with the National Planning Policy Framework. The closest was Blackhouse Wood, 1100m to the north of the site, adjacent to Clayfield Copse. Blackhouse Wood is an area of designated Ancient woodland, and a proposed Local Wildlife Site. Ancient woodland is listed on Natural England's ancient woodland inventory, as woodland which has existed at least since 1600 AD. It contains stands of native trees that are not obviously planted.

Both Clayfield Copse Local Nature Reserve and the nine non-statutory sites are considered to be of sufficient distance from the working area not to be directly affected, particularly given the presence of the urban areas of Reading and associated road network, which present a significant barrier to dispersal for many terrestrial mammals and invertebrates. Hence, given the distance from the site they are considered highly unlikely to be adversely impacted by the proposed development, particularly given the confined nature of the site and its current land use. Therefore, no impact on statutory or non-statutory designated areas is foreseen as a result of the proposals and no mitigation or further survey work is required.

### 6.2. Habitats

No rare or notable habitats are present and no habitats are considered to be Habitats of Principal Biological Importance on Section 41 of the NERC Act 2006. In addition, none are listed as Priority Species on the UK National Biodiversity Action Plan (JNCC 2012) or are listed in the Berkshire Biodiversity Action Plan.

A small number of self-seeded scattered broadleaved trees were present close to the boundary fence in a number of locations on the site. The mature goat willow (T5) located close to the southern corner of the site along the south eastern boundary is likely to support a range of invertebrates and higher species, which is of some ecological and amenity value, particularly given its location in an urbanised area. The tree is considered to have an ecological value at least the Local level (Appendix 9.4). Hence if possible, it is recommended that this tree is retained and integrated into the landscaping proposals for the site. The remaining trees on site comprised of self-seeded young or early mature sycamore, cherry, ash and elder, which are considered to have minimum ecological value at Site level only.

**Other Habitats:** The remaining areas of the site comprised predominantly of sparse ruderal vegetation amongst areas of bare ground and hard standing. Such habitats are common locally and considered to be of ecological value at the Site level only.

### **6.3. Legally Protected or Priority Species**

#### **6.3.1. Floral Species**

None of the floral species recorded during the survey are specifically protected by the Wildlife and Countryside Act (WCA) 1981 (as amended) or considered rare nationally or locally. In addition, none are listed as Priority Species on the UK National Biodiversity Action Plan (JNCC 2012). The majority of the species identified are common locally and typical of the habitats identified.

#### **6.3.2. Faunal Species**

The anticipated ecological impact on faunal species as a result of the proposed work is detailed below.

- Although currently the site is considered largely unsuitable for reptiles, there is the potential for the suitability to increase, should the vegetation continue to grow and the site remain unused and derelict, particularly if the site is not maintained in its current state.
- The trees on the boundary of the site contained habitat suitable for bird nesting to occur. In addition, beyond the site boundary fence was an establish area of mixed scrub, which was also considered suitable for use by nesting birds. Therefore, there is a risk of both direct and indirect impact or disturbance to individual nesting birds.
- Although no habitat of value to bats will be directly affected by the proposals, there is the potential for a significant increase in disturbance and lighting which has the potential to impact on the wider population status both during construction and use. Research has found that bats are sensitive to artificial lighting and that excessive lighting can cause bats to move away from suitable foraging grounds to alternative dark areas (Jones 2000).
- Risk of encountering stag beetles should work take place during early summer (May to July).

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## 7.0. Recommendations for Further Surveys, Mitigation and Enhancement

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### 7.1. Recommendations for further survey work

Based on the results of the survey, desk study and current proposals no further ecology surveys are considered necessary. However should the scope of the work change, a further assessment maybe required.

### 7.2. Proposed Mitigation

No mitigation specifically related to the identified designated sites is considered necessary.

#### 7.2.1. Habitats and Flora

A small number of self-seeded scattered broadleaved trees were present close to the boundary fence in a number of locations on the site. The mature goat willow (T5) located close to the southern corner of the site along the south eastern boundary was considered to have an ecological value at least the Local level with the remaining trees considered to have minimum ecological value at Site level only.

Therefore it is recommended that mature goat willow (T5) is retained and integrated into the landscaping proposals for the site. Some or all of the remaining trees on site could be removed, and replaced with trees of greater ecological value, as part of the wider biodiversity improvements on the site.

All the trees to be retained should be protected, should construction activities be undertaken in close proximity. It is recommended all contractors are instructed to follow standard best practice for working close to trees, particularly in order to avoid damage to root systems and protect the existing trees. As such, BS5837 "Trees in relation to construction" (2012) should be followed and appropriate tree protection measures implemented to prevent accidental damage during the work.

#### 7.2.2. Protected Species

**Reptiles:** The site is currently considered largely unsuitable for reptiles, given the recent disturbance from the site clearance and the sparse ruderal vegetation amongst significant areas of bare ground, which limits refugia and foraging opportunities. However, there is the potential for the suitability of the site to increase, should the vegetation continue to grow and the site remain unused and derelict, particularly if the site is not maintained in its current state. In addition, there is the risk that materials that are stored during construction activities may create habitats that could be used by reptiles. Therefore the following mitigation is recommended.

- The site should be maintained in the currently cleared state as long as possible, to avoid the potential for reptiles to move into the main construction area from the adjacent areas of suitable habitat within Caversham Park or the Cemetery grounds to the west.

Should this not be possible, and the vegetation on the site is allowed to increase and become established, it may be necessary to develop a mitigation strategy to protect any reptiles that may move into the site.

- To avoid creating suitable habitat that could be used by reptiles during construction activities, should it be necessary to store materials on site, they should be stored on areas away from the site boundary trees and vegetation preferably on hard standing. If this is not possible, all materials should be stored on raised pallets at least 30cm above the ground.
- If any reptile is found during any stage of site clearance or construction works, all works must cease immediately and the reptile allowed to move away unharmed. Should further advice be necessary, a suitably qualified and experienced ecologist is to be consulted.

**Nesting birds:** A variety of bird species are likely to be breeding within the trees on the boundary of the site. In addition, beyond the site boundary fence was an establish area of mixed scrub, which was also considered suitable for use by nesting birds. Therefore, there is a risk of indirect impact or disturbance to individual nesting birds, particularly during the initial installation and set up work. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Therefore, the work should take place outside the bird-nesting season (mid March to August inclusive).

If it is not possible to undertake the work outside of the bird nesting season, all vegetation in the vicinity of the working area should be checked for wild nesting birds, their eggs, nests or young before work is permitted to commence by a qualified ecologist. Should nesting activity be detected, all work should stop at that location. The work will need to be rearranged until all young birds have fledged or nesting activity ceases.

**Bats:** The results of the desk study indicated that bats are present in the wider area surrounding the site. Internally the site offers little foraging opportunities for bats, however the vegetation beyond the boundary are likely to offer more significant foraging opportunities. Although no habitat of value to bats will be directly affected by the proposals, there is the potential for a significant increase in disturbance and lighting which has the potential to impact on the wider population status both during construction and use.

- To minimise the impact on bats, it is recommended that construction activities carried out between March and October inclusive should only be undertaken during daylight hours. This will minimise the risk of any disturbance occurring to any bats that may use the site or adjacent land.
- If possible, the use of any artificial exterior lighting should be avoided to eliminate the potential impact on foraging or commuting bats. If this is not possible, low level, directional low pressure sodium lighting is recommended, with only the minimum light levels required used. Research has found that bats are sensitive to artificial lighting and that excessive lighting can cause bats to move away from suitable foraging grounds to alternative dark areas (Jones 2000). Lighting should be directed downwards to where it is needed with minimal light spillage. Artificial lighting should not directly illuminate any habitats of value to foraging or commuting bats, in particular the boundary scrub or trees.

**Stag beetles:** Results from the desk study suggest that stag beetles may be present in the vicinity of the site, however the absence of any suitable habitat indicates that stag beetles are not breeding on the site. It is considered that the trees, shrubs and nearby houses could provide sheltered habitat for adult male stag beetles which fly during early summer (between May and July) as they search for females to mate. Hence the following mitigation is recommended.

- Should work take place between May and July, the site team should be briefed on the potential presence of stag beetles within the site and informed to avoid them should they be encountered

and to allow them to escape unhindered. Should they be found upside down, they should be carefully turned over using fingers, a twig, or paper and then be allowed to move away.

- Water containers used during construction should be covered or an access provided to allow stag beetles to escape should they inadvertently land in the water, which is common during the adult flying season (May to July).

### 7.3. Recommended Ecological Enhancements

In accordance with Sections 109 and 118 of the National Planning Policy Framework (NPPF) 2012, the Natural Environment and Rural Communities Act (2006) and Government Circular 06/2005 (ODPM, 2005), development proposals should seek to incorporate measures to further the conservation of protected species and biodiversity in general.

- It is recommended that a comprehensive landscaping and planting plan should be prepared for the site, based on planting with native species with known wildlife benefits. The landscaping should be incorporated into the design of the site and designed to link up and connect to the wider habitats in the area. If possible, the area of scrub vegetation immediately beyond the site boundary to the west and north of the site should be incorporated into the landscaping and linked into the wider vegetation on site. This is to create habitat corridors that will allow wildlife to move around and into the proposed development site.

The new planting scheme should seek to create a gradation of vegetation types that include native trees and shrubs and tall grasses and herb species. In particular, flowering plants will be of benefit to invertebrate species and shrubs and trees may provide nesting opportunities for birds. A comprehensive list of suitable species is given in Appendix 9.6, which could be used as a basis for species selection. In particular, flowering plants will be of benefit to invertebrate species and shrubs and trees may provide nesting opportunities for garden birds.

- In addition, alongside the site entrance and between the proposed dwelling units, hedgerows could be planted using species of value to wildlife. The hedgerow should comprise of a double staggered row of five whips per metre and be based on a mix of species, such as guelder rose (*Viburnum opulus*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), privet (*Ligustrum vulgare*) or firethorn (*Pyracantha* sp.).
- A management plan should be prepared to ensure that the newly planted and landscaped areas are managed for the long term benefit of wildlife. This should include provision for area specific mowing and cutting regimes and maintenance to ensure that the landscaped areas are managed for the long term benefit of wildlife.
- To provide additional bird nesting habitat, at least five bird-nesting boxes should be attached either to the new buildings, or mounted within trees within the site boundary. The boxes should be of woodcrete construction, such as the Schwegler 1MR Avianex 1 box which is rot-proof and maintenance free. This will provide nesting opportunities for a range of bird species likely to use the site.
- If possible, it is also recommended that bat boxes such as Schwegler summer bat boxes (e.g. 1FF, 1FS, 2F and 2FN) and Bat bricks or bat tubes (e.g. Schwegler woodcrete Brick Box Type 27 for bats or 1FR Bat Tubes) could be installed within the new building to provide artificial roost sites for crevice-dwelling bat species. (<http://www.schwegler-natur.de>).

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## 8.0. References

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The Natural Environment in Berkshire Biodiversity Strategy 2014 – 2020

Foster, J. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10(4), 143-155.

Jones, J. (2000) *The Impact of lighting on bats*.

Natural England (2011) TCM6-21705 *Standing Advice Species Sheet: Great crested newts*. Natural England, Peterborough

Institute of Ecology and Environmental Management (2006). *Guidelines for Ecological Impact Assessment. Institute of Ecology and Environmental Management*, Winchester.

Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit*. Reprinted by JNCC, Peterborough.

Collins J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines, (3rd edition)*. The Bat Conservation Trust London.

Mitchell-Jones, A.J. & McLeish, A.P. [Eds.] (2010) *The Bat Workers Manual (4th edition)*. Joint Nature Conservancy Council, Peterborough.

English Nature Report ENRR Number 576 (2004) *An assessment of the efficiency of capture techniques and the value of different habitat for great crested newt (Triturus cristatus)*. English Nature, Peterborough.

(JNCC, 2012) *The UK Biodiversity Action Plan (UKBAP) 1992-2012*.

Bright, P., Morris, P. & Mitchell-Jones, A. (1996). *Dormouse Conservation Handbook*. English Nature, Peterborough.

Stace, C. (1997) *New Flora of the British Isles (2nd edition)*. Cambridge University Press, Cambridge.

**Web addresses for access to full UK legislation and policy text:**

Conservation of Habitats and Species Regulations 2010:

[http://www.opsi.gov.uk/si/si2010/uksi\\_20100490\\_en\\_1](http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1)

Habitats Directive: [www.europa.eu.int/eur-lex/en/lif/dat/1992/en\\_392L0043](http://www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043)

Birds Directive: [eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en](http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en)

Wildlife and Countryside Act 1981:

[www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga\\_19810069\\_en\\_1](http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1)

Countryside and Rights of Way Act 2000: [www.legislation.hmso.gov.uk/acts/acts2000/20000037](http://www.legislation.hmso.gov.uk/acts/acts2000/20000037)

Natural Environment and Rural Communities Act 2006:

[http://www.opsi.gov.uk/acts/acts2006/ukpga\\_20060016\\_en\\_1](http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1)

National Parks and Access to the Countryside Act 1949:

[http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga\\_19490097\\_en\\_1](http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1)

National Planning Policy Framework 2012:

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

UK Biodiversity Action Plan: <http://jncc.defra.gov.uk/>

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## 9.0. Appendix

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## 9.1. Site Photographs



Photograph 1: View towards the site entrance from the interior of the site.



Photograph 2: The site entrance from Lowfield Road.



Photograph 3: The interior of the site looking towards the north western boundary.



Photograph 4: The western part of the site looking north.



Photograph 5: The southern end of the site looking north.



Photograph 6. The north eastern boundary.



Photograph 7: The interior of the site looking north west.



Photograph 8. Tree T1 on the south eastern boundary.



Photograph 9: The utility building.



Photograph 10. Trees T13-16 either side of the utility building.

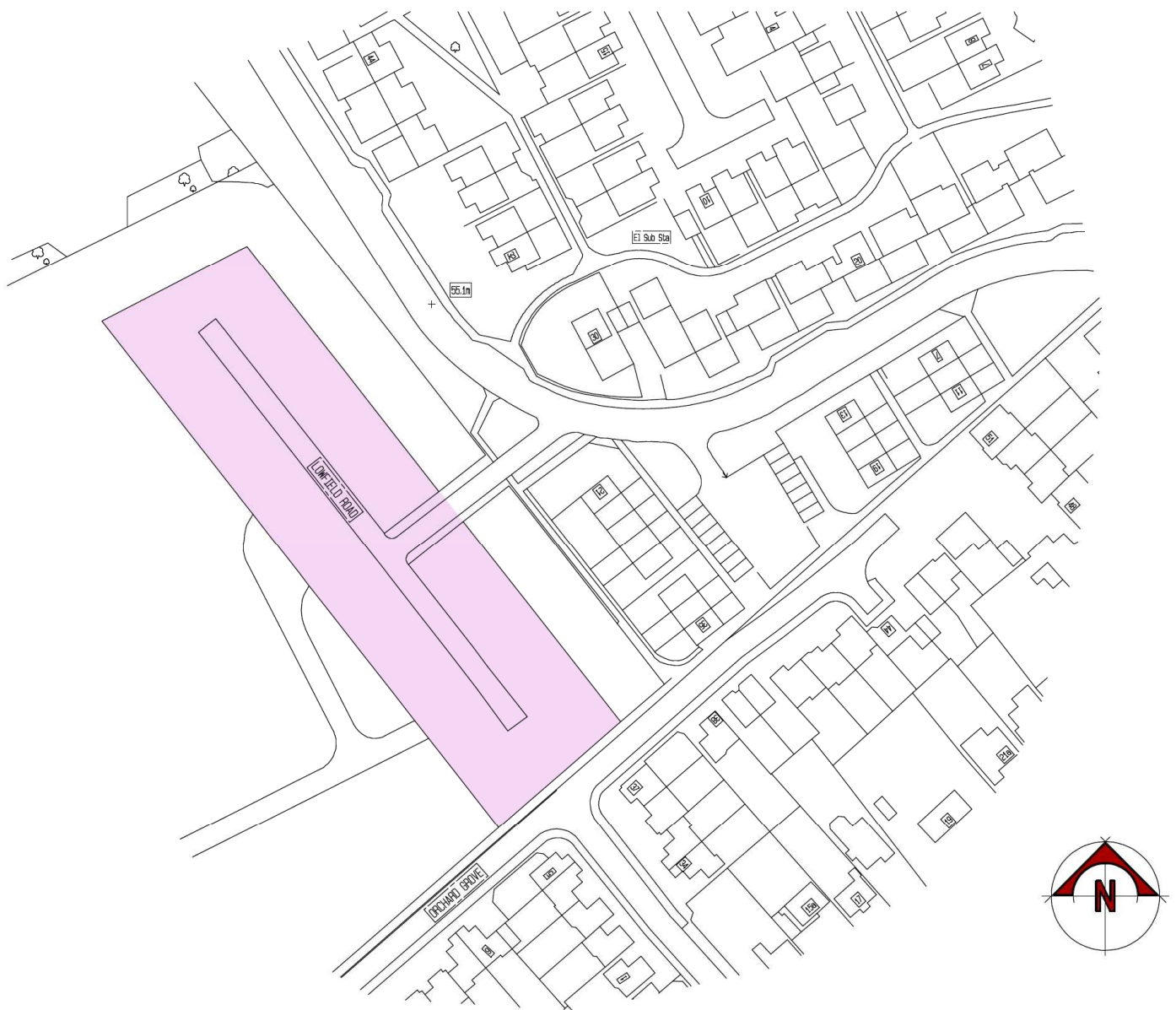


Photograph 11: Trees T6-8 along the south eastern boundary.



Photograph 12. Tree T5 (goat willow).

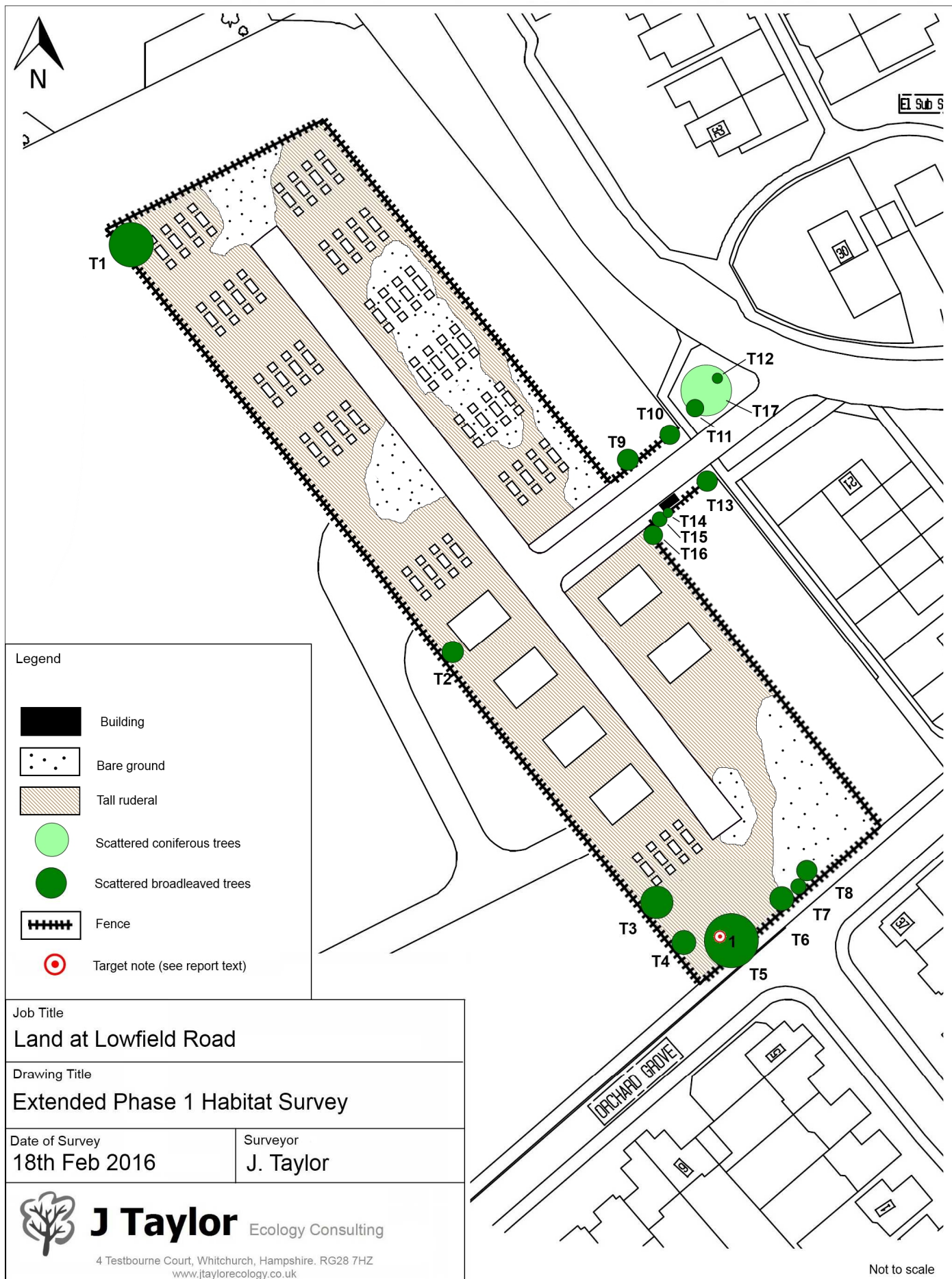
## 9.2. Location Plan



### LOCATION PLAN (1:1250)

Proposed new residential development at Lowfield Road in Reading, Berkshire RG4 6NF  
(approximate central OS grid reference SU730758).

### 9.3. Extended Phase 1 Habitat Survey Plan



## 9.4. Definitions of the Level of Habitat Value

| Geographic level of Value | Definition                                                                                                                                                                                                   |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| International             | Ramsar Sites, Special Protection Areas, Biosphere Reserves, Special Areas of Conservation. Sites supporting populations of internationally important species.                                                |
| National                  | SSSIs or non-designated Sites meeting SSSI selection criteria, NNRs, Marine Nature Reserves, NCR Grade 1 Sites. Sites containing viable areas of key habitats identified in the UK Biodiversity Action Plan. |
| Regional                  | Sites containing viable areas of threatened habitats listed in a Regional BAP (or some Natural Areas), comfortably exceeding SNCI criteria, but not exceeding SSSI criteria.                                 |
| County / Metropolitan     | Sites meeting the criteria for county or metropolitan designation (SNCI, CWS, etc.). Ancient semi-natural woodland, LNRs or viable areas of key habitat types listed in county BAPs/Natural Areas.           |
| District / Borough        | Undesignated Sites or features considered to appreciably enrich the habitat resource in the District or Borough.                                                                                             |
| Local                     | Undesignated Sites or features which appreciably enrich the habitat resource within the Parish or Neighbourhood.                                                                                             |
| Site                      | Habitat of value at the site level or immediate zone of influence only. Low grade and widespread habitat of negligible value.                                                                                |

## 9.5. Definitions of the Level of Species Value

| Geographic Level of Value | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| International             | <p>Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP.</p> <p>A regularly occurring, nationally significant population/number of any internationally important species.</p> |
| National                  | <p>Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP).</p> <p>A regularly occurring, regionally or county significant population/number of any nationally important species.</p>                                                                                                                                                                                                |
| Regional                  | <p>Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation;</p> <p>A regularly occurring, locally significant number of a regionally important species.</p>                                                                                                              |
| County / Metropolitan     | <p>Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation;</p> <p>A regularly occurring, locally significant number of a County/Metropolitan important species.</p>                                                                                                                                                                   |
| District / Borough        | <p>A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation;</p> <p>A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.</p>                                                                                                                 |
| Local                     | <p>Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. ecological diverse hedgerows.</p> <p>Local Nature Reserves selected on Parish ecological criteria.</p>                                                                                                                                                                                                                              |
| Site                      | Low grade and widespread species.                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## 9.6. Suggested Planting Schedule

The species in bold are considered to be of particular value to wildlife.

| Type                                      | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Large trees                               | Ash ( <i>Fraxinus excelsior</i> )<br>Beech ( <i>Fagus sylvatica</i> )<br><b>Oaks (<i>Quercus robur</i> and <i>Q. petraea</i>)</b><br>Small-leaved lime ( <i>Tilia cordata</i> )<br>White willow ( <i>Salix alba</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Medium/small trees                        | Apples ( <i>Malus</i> sp.)<br>Cherries ( <i>Prunus avium</i> and <i>P. padus</i> )<br>Field maple ( <i>Acer campestre</i> )<br>Holly ( <i>Ilex aquifolium</i> )<br><b>Rowan (<i>Sorbus aucuparia</i>)</b><br>Silver birch ( <i>Betula pendula</i> )<br>Yew ( <i>Taxus baccata</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Hedges                                    | <b>Blackthorn (<i>Prunus spinosa</i>)</b><br>Guelder rose ( <i>Viburnum opulus</i> )<br><b>Hawthorn (<i>Crataegus monogyna</i>)</b><br>Hazel ( <i>Corylus avellana</i> )<br>Privets ( <i>Ligustrum vulgare</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Climbers                                  | Brambles ( <i>Rubus fruticosus</i> )<br>Dog rose ( <i>Rosa canina</i> )<br>Field rose ( <i>R. arvensis</i> )<br><b>Honeysuckle (<i>Lonicera periclymenum</i>)</b><br>Wild clematis ( <i>clematis vitalba</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Cultivated plants for borders             | Angelica ( <i>Angelica archangelica</i> )<br>Aubretia ( <i>Aubretia deltoidea</i> )<br><b>Barberry (<i>Berberis</i> sp.)</b><br>Candytuft ( <i>Iberis sempervirens</i> )<br>Christmas rose ( <i>Helleborus niger</i> )<br>Evening primrose ( <i>Oenothera biennis</i> )<br>Forget-me-not ( <i>Myosotis</i> spp.)<br>French marigold ( <i>Tagetes</i> spp.)<br>Globe thistle ( <i>Echinops ritro</i> )<br>Grape hyacinth ( <i>Muscari botryoides</i> )<br>Hollyhock ( <i>Althaea rosea</i> )<br>Phlox ( <i>Phlox paniculata</i> )<br><b>Lavender (<i>Lavendula</i> spp.)</b><br>Red valerian ( <i>Centranthus ruber</i> )<br>Snapdragon ( <i>Antirrhinum majus</i> )<br>Snowdrop ( <i>Galanthus nivalis</i> )<br>Sweet William ( <i>Dianthus barbatus</i> )<br>Wallflower ( <i>Cheiranthus cheiri</i> )<br><b>Ice plant (<i>Sedum spectabile</i>)</b><br>Michaelmas daisy ( <i>Aster</i> spp.)<br>Perennial cornflower ( <i>Centaurea Montana</i> )<br><b>Perennial sunflower (<i>Helianthus decapetalus</i>)</b> |
| Other shrubs for nectar, pollen or fruits | Bodant viburnum ( <i>Viburnum x bodnantense</i> )<br>Californian lilac ( <i>Ceanothus</i> spp.)<br><b>Firethorn (<i>Pyracantha</i> spp.)</b><br>Himalayan honeysuckle ( <i>Leycesteria Formosa</i> )<br>Laurustinus ( <i>Viburnum tinus</i> )<br>Lilac ( <i>Syringa vulgaris</i> )<br>Mahonia ( <i>Mahonia</i> spp.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| Wildflowers | Agrimony ( <i>Agrimonia eupatoria</i> )<br>Chicory ( <i>Chichorium intybus</i> )<br>Chives ( <i>Allium schoenoprasum</i> )<br>Common poppy ( <i>Papaver rhoeas</i> )<br>Corncockle ( <i>Agrostemma githago</i> )<br>Cornflower ( <i>Centaurea cyanus</i> )<br>Corn marigold ( <i>Chrysanthemum segetum</i> )<br>Cowslip ( <i>Primula veris</i> )<br>Dame's-violet ( <i>Hesperis matronalis</i> )<br>Devil's-bit scabious ( <i>Succisa pratensis</i> )<br>Field scabious ( <i>Knautia arvensis</i> )<br><b>Foxglove (<i>Digitalis purpurea</i>)</b><br>Germander speedwell ( <i>Veronica chamaedrys</i> )<br>Great mullein ( <i>Verbascum Thapsus</i> )<br>Greater knapweed ( <i>Centaurea scabiosa</i> )<br>Harebell ( <i>Campanula rotundifolia</i> )<br>Herb-robert ( <i>Geranium robertianum</i> )<br>Lady's bedstraw ( <i>Galium verum</i> )<br>Marjoram ( <i>Origanum vulgare</i> )<br>Meadow cranesbill ( <i>Geranium pratense</i> )<br>Oxeye daisy ( <i>Leucanthemum vulgare</i> )<br>Primrose ( <i>Primula vulgaris</i> )<br><b>Purple loosestrife (<i>Lythrum salicaria</i>)</b><br>Red campion ( <i>Silene dioica</i> )<br>Spiked speedwell ( <i>Veronica spicata</i> )<br>Tansy ( <i>Tanacetum vulgare</i> )<br>Teasel ( <i>Dipsacus fullonum</i> )<br>Toadflax ( <i>Linaria vulgaris</i> )<br>White campion ( <i>Silene alba</i> )<br><b>Wild thyme (<i>Thymus drucei</i>)</b><br>Yellow loosestrife ( <i>Lysimachia vulgaris</i> ) |
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